

# RESEARCH DAY

Texas A&M Engineering Experiment Station Smart Grid Center (SGC)

Department of Electrical and Computer Engineering  
Energy and Power Group (EPG)

Room 1107-1108  
Center for Infrastructure Renewal (CIR), Texas A&M University System  
1041 RELIS Parkway, Bryan TX 77807

Friday, April 22, 2022

## Agenda

- 8:30 – 9:00** Arrival and check in; light continental breakfast provided
- 9:00 – 9:25** Welcome, SGC and EPG Overview (Thomas Overbye) [Slides](#)
- 9:25– 9:50** Asset Management in Distribution Systems with Distributed Renewable Generation (Miroslav Begovic) [Slides](#)
- 9:50-10:15** ML/AI for Risk Prediction and Mitigation of Outage Impacts (Mladen Kezunovic) [Slides](#)
- 10:15 – 10:30** Break

### Research Session 1: Thomas Overbye (Chair) (10:30 to Noon, Room 1107-1108)

- 10:30 – 10:55** Closing the Loop: Developing and Validating a Next-Generation Cyber-Physical Energy Management System from Situational Awareness to Risk Mitigation (Kate Davis)
- 10:55 – 11:20** Enhancing Cybersecurity of Grid Connected PV Inverters with Dynamic Watermarking (Hasan Ibrahim) [Slides](#)
- 11:20 – 11:40** Wide-Area Transmission Grid Operation Visual Storytelling (Jess Wert) [Slides](#)
- 11:40 – Noon** Development and Application of a University Electric Grid Control Room Research Facility (Jonathan Snodgrass) [Slides](#)

### Lunch (Room 1107-1108) and Control Room Hands-On Activities and Demos (Rooms 3339 and 3350)

- Noon – 13:10** Lunch at Pre-function Area; Control room hands-on activities and demos in Rooms 3339 and 3350

### **Research Session 2: Adam Birchfield (Chair) (13:10 to 14:40, Room 1107-1108)**

- 13:10 – 13:35**      New Electric Vehicle Testing Facility Overview (Joe Zietsman) [Slides](#)
- 13:35 –14:00**      Towards Carbon-Neutral Electricity and Mobility: Is the Grid Infrastructure Ready (Le Xie) [Slides](#)
- 14:00– 14:20**      Partial Resonance AC Link Grid-connected Converters (Farid Naghavi) [Slides](#)
- 14:20– 14:40**      High Altitude Electromagnetic Pulse E3 Modeling and Mitigation (Melvin Stevens) [Slides](#)
- 14:40 – 14:55**      Break

### **Research Session 3: Kate Davis (Chair) (14:55 to 16:00, Room 1107-1108)**

- 14:55 – 15:20**      Modeling and Analysis of Coupled Electric Grid and Natural Gas Infrastructures (Adam Birchfield) [Slides](#)
- 15:20 – 15:40**      Application of Multi-Domain Energy Dynamics to Magnetism (Kason Carroll)
- 15:40 – 16:00**      The ARPA-E Grid Optimization Competition (Farnaz Safdarian)
- 16:00**                Adjourn

## **Logistics**


The event will be held at the Texas A&M Center for Infrastructure Renewal (CIR). CIR is on the Texas A&M RELLIS campus. For parking at CIR, TAMU parking permits apply, otherwise for free parking, when entering to the CIR building you must to provide your car's license plate number at the front desk.

For any issues associated with the event contact either Tom Overbye ([overbye@tamu.edu](mailto:overbye@tamu.edu), cell: 217-649-9488) or Andrea Kishne ([akishne@tamu.edu](mailto:akishne@tamu.edu), office: 979-317-1285) or Melisa Spradlin ([melisa.spradlin@tamu.edu](mailto:melisa.spradlin@tamu.edu)); the CIR conference wing contact is Tania Wolf ([tania.wolf@tamu.edu](mailto:tania.wolf@tamu.edu)).

# Directions and Parking

- CIR building is marked with #20 on the RELIS campus map.
- Parking is available nearby the CIR building. **For Guests without Texas A&M University parking permits**, parking is available with no fee charged, just, please follow instructions shown below:
  - CIR staff will register you upon arrival.
  - You must provide name, license plate number and reason for visit.
  - Permits are tag-less and are monitored using license plate recognition.

Maps are shown below.



## RELLIS

THE TEXAS A&M UNIVERSITY SYSTEM

### NORTHEAST CAMPUS MAP

**RELLIS CAMPUS INFORMATION** | [RELLIS.tamus.edu](http://RELLIS.tamus.edu)

Corporate & Partnerships 979.458.2404

Education 979.458.6037

Physical Address 3100 Texas 47  
Bryan, TX 77807


Email [RELLIS@tamus.edu](mailto:RELLIS@tamus.edu)


**BUILDING NUMBER & NAME**

- 1 RELIS Academic Complex Phase 1 (Opening Fall 2019)
- 2 Blinn College Walter C. Schwartz Building
- 3 Blinn College Faculty Annex
- 4 TEEC Law Enforcement Office Building
- 5 TEEC Law Enforcement Gym
- 6 Architecture Fabrication and Design Lab
- 7 Architecture Fabrication and Design Lab
- 8 Conservation Research Lab
- 9 RELIS Campus Administration and Operations Building (Opening Spring 2019)
- 10 RELIS Central Utility Plant
- 11 TTI Environmental & Emissions Research Lab
- 12 TTI Research Storage Building
- 13 RELIS EHS Hazardous Waste Facility
- 14 TTI Machining Facility
- 15 TTI Proving Ground Research Support
- 16 TTI Proving Ground Research Hangar
- 17 TTI Office Building
- 18 TTI Research Pendulum Test Facility
- 19 TEEC Energy Systems Lab
- 20 Center for Infrastructure Renewal (CIR)
- 21 TTI Headquarters Building
- 22 Joint Library Facility with University of Texas

**PARKING LOT PERMITS**

Visitors needing to park at RELIS should use the Parkmobile app at [transport.tamu.edu/Parking](http://transport.tamu.edu/Parking) or pay stations to pay by the hour. Or go online to purchase an annual permit beginning August 1.

 Parking lot 1000 for Academic Alliance

 Parking lot for CIR

